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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,675	03/18/2004	Jianbo Lu	81095826FGT1908	2674
28549	7590	05/16/2005		EXAMINER
KEVIN G. MIERZWA ARTZ & ARTZ, P.C. 28333 TELEGRAPH ROAD, SUITE 250 SOUTHFIELD, MI 48034			SY, MARIANO ONG	
			ART UNIT	PAPER NUMBER
			3683	

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>  10/708,675	<b>Applicant(s)</b>  LU ET AL.
	<b>Examiner</b>  Mariano Sy	<b>Art Unit</b>  3683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

## **Disposition of Claims**

4)  Claim(s) 1-26 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-16 and 20-26 is/are rejected.

7)  Claim(s) 17-19 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/7, 3/18, 6/14/04.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5)  Notice of Informal Patent Application (PTO-152)

6)  Other: \_\_\_\_\_

## **DETAILED ACTION**

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "171" in fig. 5A. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7 and 9-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "the trailer tongue" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the rear axle slip" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "a predetermined rear axle slip" in line 11. It is unclear if applicant is referring to --a predetermined rear axle slip side angle--.

Claim 16 recites the limitation "the first wheel" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 20 recites the limitation "the reverse direction signal" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim.

Claim 21 recites the limitation "a sensor yaw rate from a yaw rate sensor" in line 7. It is vague and unclear as to what applicant is conveying.

Claim 21 recites the limitation "the sensor yaw rate" in lines 12-13. It is vague and unclear as to what applicant is conveying.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 2, 5, 9, 10, 13, 21, 22, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. (US 2002/0069006 A1) in view of Bottiger et al. (US 6,449,542) and in view of Engle (US 5,452,982).

Re-claims 1, 2, 5, 9, 10, and 13 Faye et al. disclosed, as shown in fig. 1-2, a system and method of controlling a vehicle with a trailer comprising: a vehicle velocity sensor; a steering wheel angle sensor; and a controller coupled to the velocity sensor and the steering sensor, said controller determine the vehicle velocity is above a velocity threshold and the steering wheel angle is zero, said controller apply brake-steer to the vehicle, see abstract.

However Faye et al. was silent to disclose means to determine the presence of the trailer; means to determine a rear axle side slip angle of the vehicle.

Engle teaches the use of a camera 70 to determine the presence of the trailer.

It would have been obvious to one of ordinary skill in the art to install a camera into the system of Faye et al., as taught by Engle, in order to ease alignment for hitch connection between of the tractor and the trailer.

Bottiger et al. teaches, as shown in fig. 1-3, means to determine a rear axle side slip angle of the vehicle, see col. 1, lines 47-67 and col. 2, lines 1-56.

It would have been obvious to one of ordinary skill in the art to have include a means to determine a rear axle side slip angle of the vehicle into the system of Faye et al., as taught by Bottiger et al., in order to maintain stability of the vehicle with the trailer.

Re-claims 21, 22, and 25 Faye et al. disclosed, as shown in fig. 1-2, method of controlling a vehicle with a trailer comprising: determining a vehicle velocity; determining a hand wheel position signal corresponding to an angle of the hand wheel angle position; determining a sensed yaw rate from a yaw rate sensor; calculating a yaw rate based on the hand wheel signal; applying brake-steer to the vehicle when the vehicle velocity is above a velocity threshold and the sensed yaw rate is diverging from the hand wheel yaw rate, see abstract.

However Faye et al. was silent to disclose determining the presence of the trailer; determining a rear axle side slip angle of the vehicle.

Engle teaches the use of a camera 70 to determine the presence of the trailer.

It would have been obvious to one of ordinary skill in the art to install a camera into the system of Faye et al., as taught by Engle, in order to ease alignment for hitch connection between the tractor and the trailer.

Bottiger et al. teaches, as shown in fig. 1-3, means to determine a rear axle side slip angle of the vehicle, see col. 1, lines 47-67 and col. 2, lines 1-56.

It would have been obvious to one of ordinary skill in the art to have include a means to determine a rear axle side slip angle of the vehicle into the system of Faye et al., as taught by Bottiger et al., in order to maintain stability of the vehicle with the trailer.

8. Claims 3, 4, 11, 12, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. in view of Bottiger et al. and Engle as applied to claims 1, 9, and 21 above, and further in view of Breed et al. (US 6,748,797).

Re-claims 3, 4, 11, 12, 23, and 24 Faye et al. as modified failed to disclose means to determine the presence of a trailer comprises a reverse aid sensor or an ultrasonic sensor.

Breed et al. teaches the use of several types of sensors used in vehicle such as camera, radar, rear, and vision sensors, see col. 23, lines 44-53.

It would have been obvious to one of ordinary skill in the art to install a reverse aid sensor or an ultrasonic sensor into the system of Faye et al. as modified, in view of the teaching of Breed et al., as a matter of choice of sensors that have the same function of ease alignment for hitch connection between the tractor and the trailer.

9. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. in view of Bottiger et al. and Engle as applied to claim 1 above, and further in view of Bell et al. (US 4,428,596).

Re-claims 6 and 7 Faye et al. failed to disclose wherein determining the presence of a trailer comprises detecting a locating plate with a locating hole positioned along a trailer tongue behind the vehicle.

Bell et al. teaches, as shown in fig. 1-3, a locating plate with a locating hole positioned along a trailer tongue behind the vehicle.

It would have been obvious to one of ordinary skill in the art to have install a locating plate with a locating hole positioned along a trailer tongue behind the vehicle of Faye et al. as modified, in view of the teaching of Bell et al., in order to ease alignment for hitch connection between the tractor and the trailer.

10. Claims 8, 15, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. in view of Bottiger et al. and Engle as applied to claims 1, 9, and 21 above, and further in view of Wessman (US 6,612,394).

Re-claims 8, 15, and 26 Faye et al. as modified failed to disclose wherein applying brake-steer comprises applying at least one brake at a first wheel to reduce a vehicle turning radius.

Wessman teaches apply brake-steer by applying at least one brake at a first wheel to reduce a vehicle turning radius, see abstract.

It would have been obvious to one of ordinary skill in the art to apply brake-steer by applying at least one brake at a first wheel to reduce a vehicle turning radius into the system of Faye et al. as modified, in view of the teaching of Wessman, in order to maintain stability of a vehicle during turning.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. in view of Bottiger et al. and Engle as applied to claim 9 above, and further in view of Schmitt et al. (US 6,456,924).

Re-claim 16 Faye et al. as modified failed to disclose wherein the controller programmed to brake-steer by applying an increased drive torque to a second wheel relative to a first wheel.

Schmitt et al. teaches controller programmed to brake-steer by applying an increased drive torque to a second wheel relative to a first wheel.

It would have been obvious to one of ordinary skill in the art to utilize the known teaching of the controller programmed to brake-steer by applying an increased drive torque to a second wheel relative to a first wheel in the system of Faye et al. as modified, as taught by Schmitt et al., in order to improve vehicle's stability during turning.

12. Claims 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claim 20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ito et al. (US 5,228,757)

Breen (US 5,411,322)

Koibuchi (US 5,882,092)

Wetzel et al. (US 6,450,019)

Rupp et al. (US 6,523,911)

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariano Sy whose telephone number is 571-272-7126.

The examiner can normally be reached on Mon.-Fri. from 8:30 A.M. to 2:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci, can be reached on 571-272-7099. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*M. Sy*

May 12, 2005

*M. C. Graham*  
May 12, 2005

**MATTHEW C. GRAHAM**  
**PRIMARY EXAMINER**  
**GROUP 310**